REPORT

OF THE

SPECIAL COMMITTEE

OF THE

SELECT AND COMMON COUNCIL,

IN RELATION TO THE

Fire Alarm and Police Telegraph,

PRESENTED 12th OCTOBER, 1854.

Philadelphia:

INQUIRER BOOK PRESS, 57 SOUTH THIRD STREET.

1854.

PLAN
OF THE CITY OF
PHILADELPHIA,
Showing the Boundaries of the Fire Districts as proposed by Councils — also the Telegraphic Signal Boxes, Fire Alarm Bells, Signal & Police Circuits. — [Similar to the one now in successful operation in Boston] as proposed by
Messrs Purdy & Philips
of Philadelphia.
EXPLANATIONS
Police Stations
Signal Box Circuits
Alarm Bell Circuits
Alarm Bells
Signal Bases
Boundaries of Fire Districts
Police Telegraph Circuit
Central Station State House
SCALE
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PETTY'S ISLAND
LEAGUE ISLAND
DELAWARE RIVER
SCHUYLKILL RIVER
PASSYUNK
GLOUCESTER
Old York Road
Germantown Road
Ridge Road
Passyunk Road
Woodlands Cemetery
Frankford Creek
Wingohocking Creek
Tacony
Torresdale
Bridesburg
Kensington
Richmond
Port Richmond
Gray's Ferry
Point Breeze
Moyamensing
Navy Yard
Centreville
Kaighn's Point
Petty's Island
Little Timber Creek
Crown Point Road
Darby Road
Baltimore Turnpike
Westchester Road
Haverford Road
Lancaster Road
Schuylkill
Delaware
Frankford
Tacony
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APPENDIX, No. 64.

To the Honorable, the Presidents of Select and Common Council.

The Committee, appointed by resolution passed September 5th, 1854, to visit Boston and New York, for the purpose of examining the Fire and Police Telegraphs, now in operation in those cities, do respectfully report:—

That they left Philadelphia on the 18th, and returned on the 26th of September (1854): that they passed two days in New York, more or less engaged in examining the telegraph in use there; that during their stay the polite attentions which they received from some of the members of the Common Council, the Chief Engineer of the Fire Department, and some of the officers of the Police, greatly facilitated the purposes of their visit; that in their examination, they were accompanied by Mr. Robinson, the Superintendent, who is also (as they understand) a party interested; that the system used in New York, together with its advantages, are fully set forth and described in his (Mr. Robinson's) communication hereto annexed, marked Schedule A.

That after examining the system as used in New York, your Committee proceeded to Boston, where they were received by the authorities and made the guests of the city, and every facility and attention afforded by the members of the various departments of the Municipal government. Your Committee cannot too warmly acknowledge these numerous civilities, more particularly as they were extended to them, not as individuals, but as the representatives of the City of Philadelphia.

That in Boston, they also thoroughly and carefully examined, in company with the Superintendent, Mr. Farmar, the Fire and Police Telegraph used there: that the system, and its claims for adoption, are set forth at length in the communication of Messrs. Phillips and Purdy, hereto annexed, marked Schedule B.

That they have, within a few days, had a proposition to superintend the construction, by the city, of a telegraph, made by Mr. David Brooks, which proposition is appended, marked Schedule C.; but your committee respectfully report that, in their judgment, it is inexpedient for the city to un-

dertake the construction of a telegraph in the manner proposed.

This proposition has been varied by (Schedule D) a second, also made by Mr. Brooks, to construct a telegraph; but it would be, as your committee understand the proposal, more expensive than either of the others.

That besides personally examining both systems, and seeing them practically worked, your committee have read and considered the said Schedules A. and B.; and have also had the respective parties before them.

That after mature reflection and discussion, your committee have concluded to recommend the system used in Boston, but modified as suggested by your committee, as the cheapest, simplest and most efficient.

1. The cheapest, in that it costs less to construct, and particularly, in that it dispenses, by means of its hydraulic apparatus, with numerous bell-ringers, and their relays, at heavy annual salaries. It is now generally conceded that, unless machinery is very expensive, it is cheaper and better to perform labor, that does not require intelligence, by machinery rather than by human power. It is also in every way desirable, (as your committee would respectfully submit,) to diminish, as far as possible, the number of persons employed by any government, inasmuch as great official patronage has an unwholesome influence. In both of which points of view, the New York system seems objectionable.

2. The simplest, as all the bell-ringing, &c., is done from the central office, where persons of intelligence and character are employed, and sure to be always present.

3. The most efficient, as by it, notice of any thing requiring the attention of either the Fire or Police Department can be given from more numerous stations, with equal or greater rapidity, minuteness, and accuracy.

Messrs. Phillips & Purdy present three distinct proposals, of which the second appears, to your committee, to be the best adapted to the purposes of this city.

All of which is respectfully submitted.

THOS. BALCH, *Chairman*,
WM. MORAN,
J. W. MARTIEN,
WM. S. SMITH,
HENRY C. PRATT.

Philada. Oct. 12, 1854.

COMMON COUNCIL CHAMBER,
Philadelphia, September 5th, 1854.

At a meeting of the Select and Common Councils, held this day, the following resolution was adopted, to wit:

Resolved, That Messrs. Thomas Balch, George Griscom, Henry C. Pratt, William S. Smith, William Moran, and James W. Martien, be, and they are hereby authorized and requested, to visit New York and Boston, at their earliest convenience, for the purpose set forth in the report of the Police Committee, and that of Sub-Committee, to examine the Telegraphs now in operation in those cities, and report thereon.

Extract from the minutes.

Attest, JOHN M. RILEY,
Clerk of Common Council.

SCHEDULE A, REFERRED TO IN FOREGOING REPORT.

To the Honorable, the Common Council of Philadelphia.

GENTLEMEN:—The undersigned would respectfully propose to your Honorable body, to connect by telegraph all the houses occupied by fire companies of the city of Philadelphia, located in the different wards; also all of the Police Stations in said wards, (after the plan now in use in New York city,) for a fire telegraph; these points to be connected with the State House, at all of which points alarms of fire can be received, and also alarms of fire given, each of which points giving alarms of fire gives the district the fire is in, also the station giving the alarm. The undersigned will agree to construct the telegraph, as above, for the sum of thirty-five thousand dollars, payment to be made *pro rata* for such station as completed, the city to reserve twenty-five per cent. (25 cts.) until the contract shall be completed. The undersigned will also agree to connect by telegraph all of the Police Station Houses in the city with the City Hall, after the manner of the New York city police telegraphs, for the sum of twenty-five thousand dollars, payment to be made *pro rata* for each station as finished, the city reserving twenty-five per cent. (25 cts.) until the completion of the whole—the whole to be completed within six months.

All of which is respectfully submitted.

C. ROBINSON & JOHN D. PARK.

September 28, 1854.

Synopsis of the New York Fire Alarm, and Police and Fire Telegraphs.

The marks on the accompanying map* indicate the different *Fire Alarm* Stations, connected by the Fire Alarm Telegraphs.

The marks ** indicate the Post Office Bell, which is connected with the Fire Telegraph.

The marks †† (in red ink) indicate the different Stations, connected by the *Police and Fire* Telegraph.

The *Fire Alarm Telegraph* has been now two years in operation; it connects eight watch towers (in each of which is suspended a very large fire bell) (on the top of which are fire-look-outs,) with the house of one fire company, the Chief Engineer's office, and the Chief's house, who, if in the night time, should he be asleep, is awakened by the Telegraph, and notified of the district the fire is in, and the point the alarm comes from; at either of these points, alarms are given to, or received from, all other points, thus connected, (and there can be more or less points or stations thus connected as may be required.) Upon each of these eight watch-towers there are watchmen stationed for the purpose of looking out for fires, and should any one of them discover a fire, he instantaneously telegraphs to all of the other stations, the district the fire is in, also the station giving the alarm, upon which each watchman rings the alarm upon the large bell in their respective towers. All of these bells weigh ten thousand pounds, excepting the City Hall bell, which weighs twenty-two thousand pounds.

The *Fire Telegraph* is also connected with the bell upon the post office (where no watchmen are stationed) in such a manner, that when the bell is rung the ringing of the bell works the telegraph, and communicates the alarm to the watch-towers; (every bell in the city could be connected in the same manner if desired;) this bell is rung by a rope reaching from the bell to the ground floor, where policemen or insurance watch have access. (This bell weighs about fifteen hundred pounds.)

The number of stations could be increased to any desired number, but for New York City these twelve stations, together with the watchmen upon the watch-towers, have given

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*A map of New York accompanied the proposition.

perfect satisfaction, as the certificate of Alfred Carson, Chief Engineer of the New York Fire Department, shows, (herewith annexed, marked No. 2.) The watchmen upon the different towers very often discover and telegraph fires before persons living in the house where the fire may be, or any one in the neighborhood know anything of it, particularly in the night time, when most every one is asleep, and consequently very few, if any, persons are walking the street; and this is the case in most of the streets, in a large city, particularly in cold weather, say towards morning; and at other times than these, a fire breaking out in the rear of a house often times occurs, and persons passing and repassing on the street, would not know anything of it, and consequently, should there be an ordinary station for telegraphing within half a block, the fire might not be communicated until the fire had gained so much headway that it would be impossible to save the building. But with the aid of the watchmen upon the towers, fires have not such a chance to get headway; as the smoke from a building on fire, no matter how small, rises up, and most any fire watchman will easily distinguish such a smoke from any ordinary smoke from a chimney or other cause.

The Police and Fire Telegraph, connecting the Police Station Houses with the City Hall, the office of the Mayor and Chief of Police, has been in operation since January. This telegraph was erected for the purpose of transmitting general information from one Station House to another, or to all others, either in regard to fires, police business, or any other purpose.

The number of Stations on the Police and Fire Telegraph being twenty-five—at each of these stations there is an alarm apparatus in conjunction with the Dial Telegraph—the alarm apparatus is used for the purpose of calling any one station, or all of them, as may be required. By this alarm apparatus signals are given and received between stations which convey whole sentences; THUS, *two taps on the bell* may indicate "There is a fire in this district, inform the man on the watch-tower." The watchman instantly telegraphs the alarm to the different watch-towers and other stations, and at once the bells are rung for that district. The Station House having given the alarm by the Signal Apparatus, at once proceeds to give the exact locality of the

fire, and also any information in regard to it. A fire which occurred in New York on the morning of October 2d, 1854, was telegraphed (ten questions and answers) in the space of fifty-four seconds. (See paper No. 3, herewith submitted.) By these signals alone the principal business of the Department (matters that are of hourly occurrence) are telegraphed in by far less time than the same can be written upon paper.

In each station thus connected is a printed book, containing the different signals in use, (a copy of which is herewith annexed, marked No. 4,) and these signals can be increased to any number, either on fire business or any other subject that may be required.

The Fire and Police and Fire Telegraphs are connected in the same Station House at different points, (and can be so connected with them all,) so that if any watch-tower gives an alarm of *fire*, the alarm is heard in the Station Houses thus connected, and is from there immediately communicated to all of the other Police Stations, which notifies the Station House in the district where the fire may be to ascertain the locality of the fire, &c., and to report by telegraph; also, if an alarm of fire is given from any Station House, one of the points where both telegraphs are connected, telegraphs to the watch-towers and other stations, the districts, &c., and the fire bells are rung.

By this means lost children are traced and found; the Coroner is notified to hold inquests, &c.; persons are taken sick, at Station Houses, the doctor is immediately notified; Insurance agents and merchants go to these Station to ascertain if their property is on fire, &c. (See letter from Mayor and Chief of Police, of New York City, marked No. 5.)

The New York City Telegraphs are operated in the manner described, and require no special operators or additional force; the systems being so simple that they are operated by any persons employed by the City Government for other duties, such as policemen, watchmen or others, by only a few minutes' instruction, only one person being employed as General Superintendent.

C. ROBINSON,
Sup't. New York Fire and
Police Telegraph.

This Telegraph would be equally as well adapted to the city of Philadelphia, (where there are no watch towers,) as it is to New York City, by having as many Signal Stations as required, where an alarm of fire could be given, say to the different Police Stations. Having bells upon them, and upon the alarm being received, some policemen (there being always some of them in the Station House,) can immediately ring the bells attached to Station Houses.

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OFFICE CHIEF ENGINEER FIRE DEPARTMENT,
(No. 21 Elizabeth Street,)
NEW YORK, July 26, 1854.

MR. C. ROBINSON—*Dear Sir*:—In reply to your question, how I am pleased with the operation of the fire telegraph erected by you some two years since, I would say that its operation far exceeds my most sanguine expectations.

I had calculated upon occasional interruptions, and that we would experience considerable difficulty in keeping it in working order, owing to the reputed delicacy with which telegraph machines must necessarily be constructed. I am agreeably disappointed, however, as quite the contrary is the case, and the most implicit reliance can be placed on the machinery constructed by you. Its best recommendation (in my opinion) is its extreme simplicity, requiring no experienced operator to properly send communications; but it can be worked (by five words of instruction) by a person who never saw a telegraph machine. Since the erection of the line, the working of the fire department has been much improved, as fires that occur in any part of the city are instantly communicated to all the bell stations, and the firemen consequently are at once directed to the right quarter.

I will only add, that having experienced its benefits, it appears now to be nearly as much impossible to get along without it, as much (almost) as without fire engines.

Yours, truly,
ALFRED CARSON, *Chief Engineer.*

—

THE following was telegraphed by the New York Police and Fire Telegraph, from the Fourth Ward Police Station, to the Chief's Office, October 2d, 1854.

4*th Ward.* There is a fire at No. 432 Pearl street, start the bells.

Chief's Office. All right, we understand you.
Chief's Office. What kind of a building is it?
4th Ward. A tin smith's shop, on ground floor.
Chief's Office. Who is in command of the Station house?
4th Ward. First Lieutenant.
Chief's Office. Have you sent your men to the fire?
4th Ward. Yes.
Chief's Office. Do you need any assistance?
4th Ward. No. The fire will be out soon.

The above was telegraphed from the Fourth Ward Station House to the Chief's Office, in the space of fifty-four seconds.

J. MURRAY DITCHETT, *Captain, 4th Ward.*

This is to certify that I am acquainted with the hand writing of Capt. J. Murray Ditchett, of the 4th District, and that I know the above signature to be in the hand writing of said Ditchett.

GEO. W. MATSELL, *Chief of Police.*

This is to certify that the above stated correspondence, by telegraph, passed between this (Chief's) office and the Fourth District Station House, and in the space of fifty-four seconds.

CHAS. L. CHAPIN, *Sergt. of Telegraph.*

October 2, 1854.

OFFICE OF THE CHIEF OF POLICE,
New York, July 26, 1854.

To whom it may concern:

The Telegraph, constructed by Mr. Charles Robinson for the use of the Police Department of this city, has been in successful operation for several months past, and during that time has steadily increased in favor.

The system is exceedingly simple and ingenious—requires no special operator, other than the Captain and Lieutenants of the Patrol Districts in which it is located.

The Station Houses being thus connected with this office, any thing of importance transpiring in the several districts is at once transmitted to every point in the city, and questions and answers given in less time than the same can be written on paper.

On the breaking out of a Fire, information of the fact is

immediately given from the nearest Station House to every other in the city, accompanied with the name of Street, number and description of Building, extent of Fire, &c., &c., often before the fire bells have sounded any alarm.

Mr. Robinson has also erected for the Fire Department a system of telegraph which gives perfect satisfaction.

With the Police and Fire Telegraph, our city is rendered more secure than it ever could be without the aid of the telegraph.

JACOB A. WESTERVELT, *Mayor.*
GEO. W. MATSELL, *Chief of Police, N. Y.*

SCHEDULE B, REFERRED TO IN FOREGOING REPORT.

To the Mayor, Presidents, and Members of the Select and Common Councils of the City of Philadelphia.

GENTLEMEN:—The subscribers most respectfully submit to your consideration proposals for erecting a Fire Alarm and a Police Telegraph. It is known as Farmar's Fire Alarm Telegraph, which has been in successful operation in Boston for the last three years, and has placed it beyond all others in point of efficacy and beneficial results.

By means of this Fire Alarm Telegraph, the whole Fire Department from every part of the consolidated city may simultaneously be made acquainted with the precise location of the scene of conflagration, enabling them directly to repair to the spot, and concentrate their power, if deemed expedient, or notice can be conveyed to one district, leaving the others in a perfect state of quietude. This certainty and precision is a matter of incalculable importance, as the alarm is given instantly, conveying to every engine house at the same moment that their services are required at a certain place.

The following facts are from official documents. The false alarms in New York, in 1848, were 98; in 1847, 125; in 1849, 162; in 1853, 239. In 1846, '7 and '8, the false alarms were one-fourth of the alarms given, and, in 1849, they were more than one-third.

In Boston the average number of false alarms annually, for six years previous to 1850, was 50—about one-seventh of the whole number of alarms given. Under the present system, in 1852, the false alarms were only 7, and, in 1853,

only 10—an average, for those two years, of only one-twentieth of the alarms for fire. Both in New York and Boston the expense of a false alarm is said to be about $100. The present number of amnual false alarms costs the City of Boston $700 or $800, while in New York the false alarms for 1849 cost the city more than $16,000, and at the same rate for 1853, over $23,000.

By the report of the late Police Board of this city, (Philadelphia,) it will be seen that in the space of three years, the number of false alarms of fires was two thousand six hundred and ninety-seven, (2,697,) an average of eight hundred and ninety-nine (899) per year.

The Fire Alarm Telegraph consists essentially of two parts:

First. The Signal apparatus and wires, by which the intelligence of a fire is communicated from every part, or any part of the city, to a central station.

Second. The Alarm apparatus and wires, by which the alarm bells in different parts of the city are struck, is from the Central Station, by the touch of a single key, which necessarily avoids the expense of having watchmen or bell-ringers in the different belfries or bell-towers.

To illustrate its principles—the City of Philadelphia would have one hundred and fifty Signal Stations or Signal Boxes distributed over its limits, from every one of which the intelligence of a fire in the neighborhood could be communicated instantly to the Central Station by the simple turning of a crank. The operator at the Central Station, the sole and only watchman required by the system, is then able, by simply depressing a key with his finger, to strike the District Number simultaneously on church, school houses and engine bells in every quarter of the city; and not only this, but also to tap back on all the Signal Boxes the number of the Signal Box in the District from which the alarm proceeded. The engines are thus directed, not only to the District, but actually to the very Box originating the alarm. The time between the discovery of a fire by the inmates of a dwelling and its definite announcement from all the Steeples, and by all the Signal Boxes, is thus, on an average, not more than two or three minutes.

The system is brought into operation, in case of fire, by applying to the nearest Signal Box, of which there is one

within a square of every house in the city. The Box is locked, but a sign tells where the key may be found, or a police officer or watchman can furnish a key. On opening the door a crank is seen within. On turning this, the number, not only of the District, but of the Box itself, is instantly communicated to the Central Station, and the longer the crank is turned, in proportion, repetitions of the same Signals are received and recorded at the Central Station, and made known to the operator by the ringing of a small bell.

The best example of a system of a *District Alarm*, in which the bells are rung *by hand* is, probably, that in the City of New York; that system would require sixteen watchmen constantly on the alert, who must each ring his bell according to the District number. The American Fire Alarm Telegraph, as used in Boston, requires *only two operators at the* CENTRAL STATION, who, at any hour of the day or night, can strike *any number of bells* by the touch of a *single finger*. Moreover, in New York, after the alarm is actually given, the firemen are only directed to a *district*, which may be a mile or two square, and in which they may run about for half an hour without finding the fire. The American Fire Alarm Telegraph, on the other hand, directs the firemen to the District by the bells, and to the Signal Box in the District from which the alarm came, by the repeating number, which is heard from time to time in *all* the Signal Boxes in the city. The fire apparatus, therefore, may always be headed from the start to within *two hundred and fifty* yards of the fire.

By way of illustration we give a more detailed description of the American Fire Alarm Telegraph, and of the safeguards by which its permanence, and the regularity and certainty of its operations are insured:

The wires are carried from the main Station, which contains the battery; from thence, like those of the ordinary telegraph wire, they are fastened on tall posts or houses, by means of iron brackets, and insulated by stone-ware supports of the most approved form. There are always duplicate wires, following different routes, between every two stations, so that if one is broken from any cause, the second remains good until the first can be repaired. The ground is not used as any part of the circuit, so that the falling of a wire produces no false connections, and double insulation also results.

These precautions are found to preserve the circuits practically intact. The wires, properly erected in a city, are very rarely interrupted from any cause, and the probability against the interruption of the two corresponding wires between neighboring stations at the same time, amounts almost to an impossibility. But besides this, the Central Station is furnished with testing apparatus, by which the integrity of each circuit is constantly ascertained.

For convenience and security, the Signal Boxes and the Alarm Bells are not connected respectively in one great Signal Circuit and one great Alarm Circuit, but the number of circuits of each class is multiplied, all of them radiating from the Central Station like the petals of a flower. Thus a Signal Circuit may traverse the north part of a city and be connected with eight or ten Signal Boxes, another the south part, &c. An Alarm Circuit may also extend north, or in any direction, and embrace one, two, or five bell towers, asthe case may be, and so on. The operation of these circuits are all, however, connected with the Central Station, so that any Signal Box can communicate its intelligence to the centre, and all the bells on the various circuits can be struck at once, if desired, from the centre.

The system is called into operation, in case of fire, by applying to the nearest "*Signal Box*," of which there is one *within, say two hundred and fifty yards of every house in the city*. The Signal Box itself is a solid, cast iron, cottage-shaped box, attached to the side of a house, opposite a gas lamp, and communicating by wires, enclosed in a wrought iron pipe, with the Signal Circuit overhead. The box is locked, but a sign tells where the key may be found, or a police officer or watchman can furnish a key. On opening the door a *crank* is seen within. On turning this, the number, not only of the District, but of the Box itself, is instantly communicated to the Central Station, and the longer the crank is turned the more repetitions of the same signals are given. These signals are received and recorded at the Central Station by a Register, at the same time that a call or office alarm bell is struck to give notice to the operator. We may suppose that the fire is signalized from Station or Box *five*, in District *three*. The operator at the centre, on seeing the record, turns immediately to the "*District Keyboard*," and presses down a key marked 3. The mechanism of the

Keyboard starts at once, and, by telegraphic communication, causes the alarm bells in the bell towers to strike the District number *three*, and to continue to do so as long as the Key is held down. This is accomplished by machinery in the bell towers, liberated at each blow by a telegraphic impulse communicated at suitable intervals by the arrangement of the Keyboard. But suppose the operator only wants to ring a part of the alarm bells. By a "*switch*" he disconnects one or more of the Alarm Circuits from the District Keyboard, and the corresponding bells are silent. But, while the operator is holding down the key of District *three*, and the telegraphic mechanism is doing all the rest of the work on the bells, he turns to one or more finger keys, which communicate back with the Signal Boxes, and presses occasionally *five* times; a little magnet and armature in each Signal Box gives a sharp click for every motion made by him, and the firemen, who run to the nearest box and listen, know that the alarm comes from District three, Station *five*, and their familiarity with the District and Station map tells them exactly where it is and the nearest route to it.

The accompanying map will materially serve in illustrating the practical operations of the Fire Alarm and Police Telegraph.

The City of Philadelphia is divided into seven Fire Districts, as already contemplated by your Honorable bodies, in the proposed re-organization of the Fire Department now before you.

There will be one hundred and fifty signal boxes, distributed as follows, viz.:

Twenty-three	in the	First	District.
Thirty-five	" "	Second	"
Thirty-five	" "	Third	"
Twenty	" "	Fourth	"
Fifteen	" "	Fifth	"
Twelve	" "	Sixth	"
Ten	" "	Seventh	"

Additional boxes may be added at a very moderate sum.

▬▬▬▬ Represents the boundaries of the several Fire Districts.

✳ Represents the Central Office, which it is suggested will be the State House.

● Represents the Signal Boxes.

⊙ Represents the Alarm Bells, to be rung by the Hydraulic Striking apparatus, of which there is one in each district.

▣ Represents the several Police Stations.

——— Represents the Alarm or Bell Circuit.

- - - - - - - - - - - - - - - - Represents the Signal Box Circuits, of which there may be three or more.

——— . ——— . ——— . Represents the Police Circuit.

It will be perceived that each bell is connected with the central office by an independent circuit, thus making combined, seven alarm or bell circuits, one bell to each district.

The great utility and benefit resulting from the proposed system, may be better understood by the following illustration.

A slight fire might occur in the First District, so slight that there would be no apparent necessity of the Fire Department of any other district to aid in its extinguishment. The operator at the central office rings no other bell but that of the district where the fire originates. The fire possibly might increase, and would require the aid and assistance of the department in the second, or even that of the whole city, the operator can ring any or all of the bells simultaneously, and thus concentrate the operations of the firemen upon one point; or again while the fire is raging in the first district, another breaks out in the sixth or any other district, he rings the first district bell, one—and the sixth district bell, six; thus each district will be distinctly notified, independent of each other, and upon the subduing of the fire in either district, the bell in that district can cease ringing without affecting or disturbing the other. So if several fires were raging at the same time, the same principle would apply.

It will be perceived that we have introduced three signal box circuits, one through the first and second—one through the third, fourth and seventh, the other through the fifth and sixth districts. The benefit derived from this arrangement is, that the wires which connect the first and second districts may become accidentally or intentionally broken, and still the other district wires are in working order, and through them any general information communicated at the central office may be sent to all the police stations on the signal circuits, by adopting a system of signals denoted by a

certain number of taps on the calls or small bells in each station, or even at any signal box in the street, to those understanding its operations.

Another important advantage which arises is, that a police station can communicate to all the other stations without the assistance of the operator at the central office.

These advantages of the American Fire Alarm Telegraph may be recapitulated, as follows:

First. It furnishes an indefinite number of Signal Stations, scattered in every part of the city, from which an alarm may be communicated, no time being lost between the breaking out or commencement of a fire and its immediate telegraphic announcement throughout all the city.

Second. The operator or watchman at the Central Station receives the intelligence immediately, and forthwith strikes the District number on one or all the Alarm Bells by telegraphic agency.

Third. The number of the Station from which the alarm proceeded, as well as the District, is telegraphed to the Fire Department, so that the engines are headed from the first to almost the exact localities of the fire.

Fourth. The arrangement of the system protects it from interruption either by accident or design, and it works with equal certainty and promptness in all kinds of weather and at all times.

Fifth. It prevents almost entirely the occurrence of false alarms, which entail a great expense on the city.

Sixth. It provides a system of organization by which the whole Fire Department of the city is brought into communication with a single centre, receiving from this centre directions, either by the Bells or Signal Boxes, and communicating back to it by a finger key, which, in addition to the crank, is placed in every Signal Box.

Seventh. It requires but ONE BATTERY at the Central Station, and only *two* operators; one for day and one for night duty.

Eighth. It will decrease the amount which is annually paid by insurers, and lessen to a considerable extent the amount of their liabilities.

Ninth. That it cannot be equalled by any other agent than electricity in point of speed.

Tenth. That it has decided superiority over all other systems now in use.

Eleventh. That it will prove of great value as a means of saving life.

We submit the opinion of Mayor Jerome V. C. Smith, of Boston, as to its incalculable importance and usefulness. He says in his late Inaugural Address:

"Boston may safely challenge the world to produce a parallel to the Fire Telegraph. It is a triumph of science made subservient to man to give him timely notice and warning to defend himself against the destructive agency of fire."

An extract from a letter from J. Sleeper, Esq., of East Boston, who was Chairman of the Committee on Fire Alarms, is hereunto appended:

BOSTON, March 20, 1854.

SIR: You ask my opinion as to the working of the system of "Telegraphic Fire Alarms in this City." While connected with the City government, during the years 1852 '53, I was Chairman of the Committee on Fire Alarms, and had an opportunity to become acquainted with the practical working of the system, and I have no hesitation in expressing my belief that it answers, in *every particular*, the high expectations that were entertained respecting it in the outset. By this system an alarm of fire can be instantly sent to the Central Office, and from thence, *at the same moment*, a general alarm may be given by the simultaneous striking of all the bells connected by wires with the Central Office. The City being divided into several districts, and the number of the district from which the alarm comes being indicated by the number of blows upon the bells, no time is lost by the Fire Department in finding out in what direction to proceed. All acquainted with the management of fires well understand the importance of having the Department early at the point of danger. Since the introduction of this system among us, the number of false alarms has greatly lessened. A great saving of expense to the City, as well as of annoyance to the Fire Department, results from this cause alone. Everything now works well, and I am persuaded that no consideration would induce the citizens of Boston to part with so important an instrumentality for the prevention of destructive conflagrations and their attendant calamities.

Very respectfully your obedient servant,

JACOB SLEEPER.

Chairman Com. of Fire Alarms, 1852-'53.

CITY HALL, BOSTON, March 21, 1854.

To whom it may concern:

The undersigned fully concurs in the foregoing statement by Mr. Sleeper, late Alderman, who is very familiar with Dr. Channing's important invention.

J. V. C. SMITH, Mayor.

—

BOSTON, Oct. 6, 1854.

Messrs. Purdy and Phillips,

GENTLEMEN:—Having been requested to express an opinion in regard to the value of the Fire Telegraph Alarm in Boston, I feel justified in saying that it meets the expectations and approval of the citizens.

Very respectfully, I have the honor to remain, your obedient servant, J. V. C. SMITH, *Mayor.*

—

PHILADELPHIA, Oct. 4, 1854.

Messrs. Purdy and Phillips,

GENTLEMEN:—In reply to yours of this date, I take pleasure in stating that I was in Boston at the time the committee appointed by our Select and Common Councils visited that city to examine the Fire Alarm Telegraph, and that I had an opportunity of making a minute and careful investigation of the system and its practical operation. Without entering into details, I am free to say, that in my opinion it is one of the most perfect inventions of the age, and that its introduction here would be of incalculable benefit, not only as a means of saving a vast amount of property, but as a powerful auxiliary to the Police establishment in preventing and suppressing riot and disorder.

So perfect is your system, that I don't believe any other now in use can compete with it, nor do I believe that were our citizens acquainted with one-tenth of its advantages, they would not hesitate one moment in authorizing its introduction *at any cost.* I trust you will be successful in your application to Councils, and beg to assure you, that whatever influence I possess shall be exerted in your behalf.

I am, very respectfully, your obedient servant,

P. C. ELLMAKER.

—

Whereas—the Southwark Hose Company, in common with our fellow firemen, deeply regret the evils that have crept

into the Department, and which, if not corrected, will drive from its support its truest friends—

Therefore, be it Resolved, That we recognise the right of the municipal authorities to organize a Fire Department they may in their wisdom decide.

Resolved, That while we are opposed to a paid organization, under the operation of which this Company would cease to exist, we are also opposed to riot and disorder, and therefore approve the bill for the re-organization of the Fire Department, now under consideration by the City Councils, and would cheerfully accept its provisions should it become a law.

Resolved, That having experienced the inefficiency of the present system of fire alarms, we respectfully urge on Councils the adoption of the *American Fire Alarm Telegraph, similar to that used in Boston*, as it is known to be *prompt* and *certain* in its operation, on which the efficiency of any system depends.

Resolved, That a copy of the above resolutions be sent to each branch of City Councils, and also be published in the Daily Sun and Sunday Dispatch.

JACOB S. ROBERTS, PRESIDENT.
JAMES M. VANDEVER, *Vice President.*
JACOB AMOS, JR., *Secretary.*

ENGINEER'S OFFICE—FIRE DEPARTMENT,
Boston, Oct. 5, 1854.

GENTLEMEN:—Having been connected with the Fire Department under the several systems through which it has passed, from a "volunteer" to the present time, and having witnessed the practical method of ringing an alarm under the previous system, and the operation under the Magnetic Fire Alarm Telegraph during its use from the commencement, I am prepared to say that I give it my unqualified approval.

It has saved the Department from the annoyance of false alarms from whatever cause, whether from the noise of rowdies or the light of a fire seen at a distance of twenty miles from the city, as was formerly the case under the previous system.

It concentrates the force of the Department to a given point in much less time than could possibly be expected under a different system, and the effect of this promptness is a decrease in the amount of property destroyed by fire.

CHARLES S. CLARK, *Acting Chief Engineer.*

BOSTON, Oct. 6, 1854.

I fully concur in the above testimony given by Mr. Clark in regard to the Magnetic Fire Alarm Telegraph.

WILLIAM BARNICOAT, *Late Chief Engineer.*

—

CLERK'S OFFICE OF THE POLICE COURT,
Boston, Oct. 5, 1854.

Messrs. Purdy and Phillips,

GENTLEMEN:—Having been asked to give my opinion as to the operation of the Telegraphic Fire Alarm in the city of Boston, I will, with much pleasure, bear testimony to its great utility and accuracy of operation. It has been in operation here about two and a half years, and I believe has given universal satisfaction, and I do not hesitate to recommend it as fully answering the objects of its construction. I have no recollection of its ever having failed to perform its duty with correctness and precision, and I believe it would prove highly satisfactory to any community who might be disposed to try its powers and properties.

Very respectfully, yours, &c.,

WM. KNAPP, *Ass't. Clerk P. O.*

—

SUPERINTENDENT'S OFFICE, NEW YORK AND WASHINGTON PRINTING TELEGRAPH CO.,
Baltimore, October 9, 1854.

Messrs. Purdy and Phillips, Philadelphia,

GENTLEMEN:—You inform me that you have made a proposition to the authorities of your city for the introduction of Farmar's Fire Alarm Telegraph, and that you desire my opinion in regard to the invention.

Some time ago I was requested by the Vice President of the New Jersey Rail Road Company to examine Farmar's mode of ringing bells by Electro Magnetism, for the purpose of introducing the same at the various streets and roads crossing their rail road track through New Jersey, and I therefore gave the subject much care and attention.

While in Boston for this purpose, Mr. Farmar, the Superintendent of the Fire Alarm Telegraph, invited me to the Central Police Station or Telegraph Office, which I visited, and witnessed his system in operation. I also visited, by request of Mr. Farmar, several of the Signal Box Stations, located on the sides of the houses, from whence communica-

tions were made and received by me, *and I do not hesitate to say that it is the only simple and complete mode for municipal purposes with which I am acquainted, and that it fully answers the purpose contemplated by the inventors, Dr. Channing and Mr. Farmar, of Boston.* I have seen other systems that were attempted to be worked successfully, but I have yet to see the one which will favorably compare with the Boston system; and which I do not think can be improved, as the ingenious inventors seem to have investigated the subject so fully that there is nothing to be done by others; therefore, by purchasing their right for Philadelphia, you have obtained the only simple and effective system of Police Telegraph with which I am acquainted.

Wishing you every success in your responsible undertaking, I remain, truly yours,

HENRY J. ROGERS, *Electric Telegraph Engineer.*

Messrs. Purdy and Phillips,

DEAR SIRS:—I have examined both systems proffered to the City Government, in the contemplated erection of a Fire Alarm Telegraph in this city, and must declare my preference in favor of Farmar's Fire Alarm. It embraces economy, celerity, and is much easier understood and put into active order than the New York system.

I think the greatest benefits would result to the Police Department by the adoption of Farmar's Telegraph, and I would speedily wish its introduction here.

Yours, &c.,

JOHN K. MURPHY, *Marshal.*

Philadelphia, Oct. 6, 1854.

POLICE TELEGRAPH.

Proposal First.—The cost of constructing the Fire Alarm, to extend over our city similar to the one used in Boston, including one hundred and fifty Signal Boxes, distributed as follows:

Twenty-three in the First	Fire District,	
Thirty-five in the Second	"	"
Thirty-five in the Third	"	"
Twenty in the Fourth	"	"
Fifteen in the Fifth	"	"
Twelve in the Sixth	"	"
Ten in the Seventh	"	"

The Hydraulic Striking Apparatus for seven bells, the instruments, bells, &c., for the Central Office—the length of wire not to exceed eighty miles—will be *fifty thousand six hundred dollars*, ($50,600.) This system can be successfully used for the ordinary police purposes, without any additional cost. If this proposal is rejected we respectfully submit others.

Second Proposal.—The American Fire Alarm, as before described—similar to the one used in Boston with the Hydraulic Striking Apparatus—one hundred and fifty Signal Boxes, distributed as suggested in the first proposal, length of wire not to exceed eighty miles, instruments, bells, &c., for Central Office, and twenty-four Signal Instruments, one in each Police Station communicating with the Central Office, will be fifty-six thousand dollars ($56,000.)

Third Proposal.—The Fire Alarm, as before described, similar to the one used in Boston—WITHOUT the Hydraulic Striking Apparatus—the bells to be rung by men appointed for that purpose, which constitutes the main difference, existing in the presence and absence of the Hydraulic Striking Bells, which ring the bells by magnetism—one hundred and fifty Signal Boxes, length of wire not to exceed eighty miles, instruments, bells, &c., for Central Office, and twenty-four Signal Instruments, one in each Police Station, communicating with the Central Station, will be fifty-two thousand two hundred dollars, ($52,200.) By the latter arrangement an alarm of fire is communicated from a Signal Box to one-third of the Police Stations and the Central Office at the same time. The operator at the Central Office communicates to the balance of the Police Stations.

Either one of the proposals is susceptible of many modifications as to the arrangement and execution of the plan of construction. We can cheerfully and satisfactorily arrange to suit the wishes in any respect of your Honorable Bodies.

Any information will be most willingly given by the undersigned, and exhibit to your Honorable Bodies the instrument for telegraphic communication in operation.

All which is respectfully submitted.

J. H. PURDY,
W. J. PHILLIPS.

PHILADELPHIA, *October* 6, 1854.

SCHEDULE C, REFERRED TO IN FOREGOING REPORT.

PHILADELPHIA, Sept. 4, 1854.

T. BALCH, Esq., *Chairman* Committee Fire Alarm and Police Telegraph.

The undersigned propose to erect for the City of Philadelphia, a Police and Fire Alarm Telegraph, upon the following conditions and terms:

The city to furnish all material of every description, and allow the undersigned to superintend the construction.

Said Telegraph to consist of one set of poles and two wires, one of which shall be an Alarm Telegraph, so arranged that by the turning of a crank, or pressing of a key, the Signal of any station or locality can be audibly or distinctly given to the central station, as may hereafter be determined. By this Signal Telegraph the Chief Engineer of the Fire Department can also bring into services such divisions as may be required.

In conjunction with this Signal or Alarm Telegraph, the undersigned proposes to use the ordinary Morse Telegraph for Police purposes, on a separate wire, connecting each of the Police Stations with the Central office.

The cost of this Telegraph is estimated as follows:

20 miles, 30 poles to the mile, shaved and neatly prepared, $7 each,	$4200
1200 insulators, $1 each,	1200
Setting the poles, $1,50 each,	900
40 miles, No. 9 galvanized wire, English manufacture, $40 per mile,	1600
Instruments and fixtures, complete for twenty Fire Police Stations, $75 each,	1875
Alarm Signals for Fire Department, for 50 Stations, $100 each,	5000
Battery materials, sufficient for one year,	1000
Morse Patent for Police Telegraph,	500
Total,	$16,275

This will cost more or less according to length of line and stations in use.

The undersigned proposes to superintend and put in opetion this telegraph for five thousand dollars, and enter bonds for the same amount, to forfeit all claim to remunera-

tion, also forfeit the amount, provided the telegraph does not answer the purpose of its construction, as well as those now in use in the cities of Boston and New York. This to be decided by a Committee appointed by the Councils.

Yours, respectfully,

D. Brooks.

SCHEDULE D, REFERRED TO IN FOREGOING REPORT.

Philadelphia, Oct. 11, 1854.

T. Balch, Esq., *Chairman, &c.*

The undersigned proposes to construct for the City of Philadelphia, a Fire Alarm and Police Telegraph, to consist of one set of poles and two wires, for $500 per mile, or with one wire at $350 per mile, and $150 for each Fire Alarm apparatus, and $125 for each Police Station apparatus.

Said telegraph to consist of shaved and painted chestnut poles, thirty to the mile, and best quality of galvanized, No. 9 iron wire, or if desired use brackets fastened to buildings instead of poles, at the same price; the city, in either case, providing the undersigned with authority to fasten the brackets to such buildings as may be necessary, also authority to set the poles wherever they may be required to stand.

The undersigned proposes to divide the Alarm Telegraph into seven circuits, or one circuit for each district, said district to be connected with a *central station* or Head Quarters, and signal stations so arranged that any particular station-signal can be given to each other station in that district, also to the central station. The central station so arranged that the particular locality or station in any district can be given to the stations in any or all the other districts.

The undersigned will guarantee in such manner as may hereafter be specified, that the line, or outside structure, shall consist of such material and quality as before stated; also enter into bonds, or guarantee in such manner as may hereafter be specified, that said Fire Alarm Telegraph shall perform its functions and answer in every way its requirements equal to that of Boston or New York.

In case the foregoing proposal is accepted, the city would be exempt from any outlay for patent right, except such as is by law conveyed to Prof. Morse, and valued by his attorney at $300 for the entire city.

The undersigned will construct upon the foregoing terms, the Fire Alarm Telegraph for one or all of the districts or sub-divisions.

Very respectfully, your obed't serv't,

D. BROOKS,

20 South Eighteenth street.